

as surely as the telephone has made it possible for man not to have to run two blocks every time he wants to communicate something [he was healthier then - Ed.]. I'm sure there are going to be a few people 100 years from now who can't write a program, but those poor people will probably be on welfare. You can choose where you want to be, you know. The person now who is essentially illiterate has a hard time being a member of society.

Ahl: Which maybe says that Chris and I should be even more concerned with education of youngsters today so that in twenty years people can better cope with increasing change. Do you think industry has a role, too?

Bushnell: In the early days of *Pong*, one of the visions of the corporation I was going to have was the educational products division basically using this cheap display computer technology that I've evolved to do an inexpensive "talking typewriter" [a device developed by O.K. Moore at the University of Pittsburgh Learning R & D Center - Ed.]. This idea was sort of laid fallow because the games hit so hard. It was like holding on to a tiger for dear life, but we now have the ability to do a talking typewriter. We're going to put the fear into the hearts of the parents of America that they're holding back their children.

Ahl: Is the talking typewriter a likely product from Atari in the future?

Bushnell: Not as you know it. But we're working on all sorts of things.

Ahl: We'll be waiting with bated breath.

Bernie De koven

Bernie De Koven is a noted designer of games of strategy, author of *The Well-Played Game*, contributing editor to *Games* magazine and *Simulation/Gaming*, and founder of the Games Preserve. A non-profit educational corporation, the Games Preserve is a game-playing co-op where one can play flying rings, ping pong, pool, puzzles, board games and more. It's located on a 25-acre farm in the rolling hills of Eastern Pennsylvania. For information write The Games Preserve, RD-1355, Fleetwood, PA. 19522. (215) 987-3456.

Ahl: Bernie, you've been mostly involved with what you might call manual games or games of strategy, but not electronic games. So, how do you see the electronic games fitting in with the overall world of games?

De Koven: Well, I see it as a completely different medium. The kind of interac-

In a video game, the screen has a life of its own independent of, but related to the players. I think the feeling is of two people interacting with each other in this "other" world on the screen.

tion that takes place when two people are playing while watching a TV screen is very different. There is an indirect kind of communication. It seems to put them in another space that they enter together but yet they're very separate from each other. In a board game, nothing happens unless you make it happen. The board isn't animated. Whereas in a video game, the screen has a life of its own, independent of, but related to the players. I think the feeling is of two people interacting with each other in this "other" world on the screen. I'm trying to figure out what the social interaction is. I think that the medium has just the most incredible potential of any that I've seen. Even now, most of the games you see really aren't utilizing the medium. For instance, the paddle used in *Breakout* could be an oscillating cylinder. The possibilities are limitless and they need to be explored.

Ahl: Do you think it's important that people have the ability to alter a game or write their own versions?

De Koven: I think it's important, but I think it's difficult. If you give people too many alternatives, they get very confused. A game falls apart when people keep changing the rules and there's no focus. I think you have to either limit the kinds of choices that people have or



Sid Sackson and Bernie De Koven at the controls of a video game.

provide them with some sort of educational system so they can learn which choice to make because each change affects the entire game. Handicapping systems are very important. In the Atari games, for example, you can have a novice or an expert rating for each player which allows you to handicap one player slightly.

Ahl: Should there be continuous levels of handicapping?

De Koven: Definitely. I like to play a well-matched game, whether I'm playing with an adult or a child. Just to be able to vary the width of the ball or the paddle is not enough for me. Maybe you could even use the electronics to automatically adjust the difficulty level within certain boundaries.

Ahl: You sound very excited about this medium. Are you planning to design some electronic or video games?

De Koven: Yes, definitely. I want to explore and work with as many different types of systems as possible. The field is amazingly exciting.

Sid Sackson

Sid Sackson is actively involved in the game industry as an inventor, collector, author and contributing Editor to *Games* magazine. His published games included *The Winning Ticket*, *Acquire* and *Sleuth*. His books — *A Gamut of Games*, *Beyond Tic Tac Toe*, *Beyond Competition* and *Beyond Solitude*.

Ahl: Sid, what new possibilities do you see with electronic games compared to board games?

Sackson: One thing electronic games do is allow a single player to play a competitive game without needing a human opponent. Another good use of the computer is where it acts as the moderator in a game between humans. Take, for instance, war games where there's secret information or unknown partial information — I think that's a field that needs to be investigated.

Ahl: Along with the positive aspects, do you see any negative ones?

Sackson: One limitation comes to mind: I still think there's something nice about handling the pieces of a game and putting them down in place. I don't think that electronics can replace that aspect of board games.

Ahl: Or give you a tactile sense?

Sackson: Right, like say with Go where you have the tactile sense of holding the stones and the aural sense of clicking them in place. I hope we never lose that.

Ahl: I hope not either, but I've learned never to underestimate the possibilities of electronic technology. ■

Profile of a Smart Electronic Game...

Atari Video Pinball

David H. Ahl

Atari Video Pinball is what has come to be known as a dedicated video game. By dedicated we mean that it is not programmable by the user and the 28 games that it plays are all built into the console. There is no plug-in ROM or cartridge containing other games. Essentially it's an extension of the Pong type of games, but at the moment it is unique. The other manufacturers of electronic games such as Coleco, APF, Unisonic, etc., do not make an equivalent to the electronic pinball game.

Hooking it up to your TV is simplicity itself. Like all video games it comes with a TV/game switchbox that has two sets of input connectors, one for the game and one for a TV antenna. It has a short 300-ohm output wire that hooks up to the antenna terminals of the TV set and a large slide switch on the side that can either be set to the game position or to the TV antenna position. It has a piece of very sticky tape on the back so that you can tape it to the back of the TV set and leave it in position. Atari recommends getting a TV/game switchbox for each TV in your house so that you can easily transport the game around from one TV to another without having to unhook the antenna terminals each time. I find this a worthwhile recommendation and in fact have so equipped all the TV sets in our house.

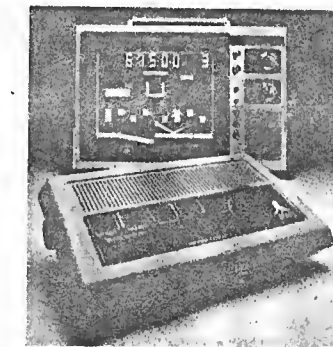
The game operates on Channel 3 which, if your area is like ours, is convenient because Cable Television also is on Channel 3. What this means, of course, is that you never have to change your TV channel selector. The game is powered by either six "C" batteries or a nine-volt battery eliminator. Obviously if you elect to use "C" batteries your best bet is the long-life alkaline or mercury batteries.

The unit itself measures 7½ by 13½ by 3½ inches high. At each side of the unit are buttons that control the flippers and on the top of the unit is a large knob at the right side that controls the paddle. There's one paddle at the bottom of the screen which moves back and forth across the screen. There are four buttons on the console: one switches the power on and

off; another is a reset button which resets each game and sets the score to zero. There is a game-select button that cycles through the seven major games in order, and an option button that cycles through the four options of each of the games. When you turn the unit on, it automatically switches to game number one which is flipper pinball (variation one). If you want to play breakout, for example, that is game number seven and you would hit the select switch seven times to get to game seven. If you wanted to play the fourth option of breakout you would then hit the option switch three times to get to the last option of breakout.

A fifth, larger button on the console controls the ball serve; this is what you hit each time you want a new ball in any of the games served up. We tried the game on both a black and white and color TV set and found that the brilliant colors provide much more excitement in the play of the game. As your ball hits one flipper or bar or box it changes color, which provides an added element of fun to the play.

The first two games are flipper pinball one and paddle pinball one. In flipper pinball you use the flipper buttons on either side of the console to move the flippers at the bottom of the play field. The flippers remain in the upward position only momentarily when you press the flipper buttons. In other words, you can't leave them closed so the ball doesn't slip through.



In paddle pinball, you use the paddle-control knob to move the paddle horizontally back and forth at the bottom of the play field and hit the ball as it comes down to the bottom of the screen back up into play. The game automatically serves the ball when you press the ball-serve button. The object of the game, of course, is to direct the ball to the bars and blocks on the playing field and to get it to bounce around and hit them as much as possible. Starting out, there are four yellow bars at the top of the play field. Each time your ball hits any of these bars, you score 200 points. The first time a bar is hit, its color changes to red; after that, the red and yellow color alternate after each hit. Also, the ball speed increases after it hits any one of these bars. There's a large block in more or less the center of the playing field with four different rectangles in it. They change color from red to green when the ball hits them. The ball will actually bounce around inside the block seemingly at random, although obviously, it's not random. You score 100 points each time the ball bounces off an inside wall. There are also six green side blocks. When the ball hits any one of these blocks you get 100 points and the block changes color to blue. When you hit the blue block you score 200 points and the blue changes to red. Hit the red block and you score 400 points and the block disappears. Eventually all the side blocks disappear but then will automatically reappear when you change all of the four top bars of the playing field to the same color (either red or yellow). When you accomplish this you get a bonus of 1500 points. The paddle in paddle pinball will shrink to half its original size when the six side blocks disappear and reappear. As soon as you miss the ball the paddle returns to the full size on the next serve.

In flipper pinball two and paddle pinball two, the playing action is exactly the same as it is in the first game. The only difference is the scoring and the playing field. In this playing field, there is a white bar at the top two small yellow side bars, two side boxes, a center hoop, sort of like a

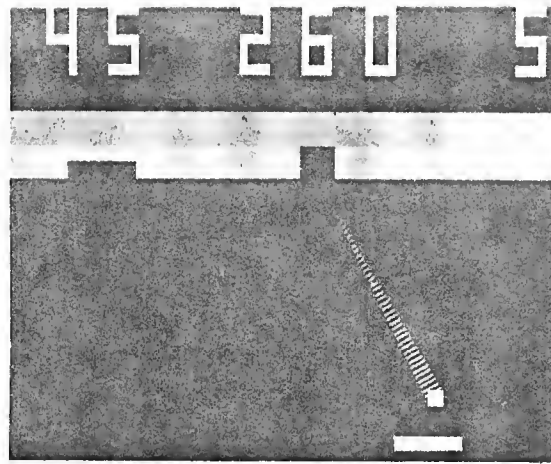
Pinball Continued...

basketball net and eight boxes at the bottom of the screen. Personally, I like the playfield on the pinball two games but there are obviously people who like each one. Typical scores for beginners playing with all seven balls are 20 to 30,000 points. A more proficient player can get up into the 100,000 point range and expert players can get well over 200,000 points.

The four playing options allow you to adjust to different playing-skill levels. Option one allows both flippers to move simultaneously and gives you seven balls. Option two also allows simultaneously flipper movement but only five balls. Option three only allows one flipper to move at a time; you have five balls. Option four also allows only one flipper to move at a time and gives you three balls. The paddle options are roughly the same. On the more difficult options, the paddle is half the size of the easier options.

The two rebound games, which might be thought of as basketball, have as their object to catch the dropping ball on the paddle and then using the paddle control to move the paddle back and forth, dribbling the ball in a sense. Then when you get into the right position, hit the flipper button to shoot the ball up and through the basketball net. The difference between rebound one and rebound two is that rebound one gives you one basketball net to shoot for; rebound two gives you three. When you make a point, the net goes from the left side of the court over to the right side and alternates back and forth as you make points. Your score is shown at the top left of the screen. The number of remaining balls, as with all of these games, is shown at the top right of the screen. If it is a consecutive game of rebound, your previous score is stored to the right of your present score, more or less in the center of the screen. That way two competing players can compare scores. I haven't played rebound that much to become a really good player but it seems as though scores in the twenties and thirties are about normal.

On a recent visit to Atari in Sunnyvale, I ventured into the "Game Room," a room containing most of Atari's coin-operated games. Atari employees can play games free during breaks and before and after work. There I met a person who I can only describe as a Breakout Junkie. His goal was to break away both walls using only one ball. While I watched, he consistently broke away both walls with three or four balls. Whew!



Undoubtedly, the most popular game on Atari Video Pinball is one called breakout. The object of the game is to remove a wall of bricks one at a time. For your sledge hammer you have the ball. The wall consists of three color bands of bricks — yellow at the bottom, green at the center, and red at the top. When you strike a brick with the ball the brick disappears and the ball bounces back to the paddle. The number of points you score for each brick depends on its color. There are six rows of bricks with three different colors. Yellow bricks at the bottom score one point, green bricks in the center two rows score four points and the top two rows of red bricks score seven points apiece. If you completely remove the wall from the playing field you will have scored 432 points. The wall then automatically sets up a second time. The maximum score if you remove the wall completely two times is 864 points. After many many plays of the game I have never gotten up to the point of removing one full wall; I've gotten very close but always have wound up with five or six bricks remaining. In other words, my scores were up in the upper 300's and low 400's. When you strike a brick in the second green row or any red row, the ball speeds up. Also, the angle at which the ball bounces off the paddle increases up to the thirteenth hit, but decreases again as the ball speeds up, thus making it somewhat easier to control. You'll find on the 9th thru 12th hit that the ball is bouncing off the paddle at some very extreme angles, thus making it very difficult to control. Any time you miss a ball and the ball is served again, it returns to its original speed and the paddle returns to original size. Your score is in the upper left corner in the play field and the number of remaining balls is in the

right corner. As in rebound, if you are playing a consecutive game of breakout, the previous game score will be stored on the screen to the right of the new score. That way, two competing players can compare scores.

The four Breakout options are: option one, paddle regular size, seven balls; option two, paddle regular size, five balls; option three, paddle half-size, five balls; option four, paddle half-size, three balls. Frankly, options one and two are more than enough challenge for most people and at this point at least, I find option three and four rather frustrating. Perhaps if I were playing eight hours a day for weeks on end, I might get up to proficiency level to handle those options.

The instruction manual is very complete, even going so far as to give a troubleshooting check-list in the last pages. The cause and remedy for the various trouble symptoms are somewhat simplistic. On the other hand, they do give the ignorant customer a starting point for debugging his system.

Atari Video Pinball is also marketed by Sears as Tele-Games, Pinball/Breakaway. Pricing ranges between \$64.95 and \$89.95. Clearly, as with all of these electronic games, it pays to shop around. Some of the stores in this area sold their demonstrators at greatly reduced prices after Christmas. In general, on these products I wouldn't recommend buying a demonstrator. They have taken very very rough abuse over a long period of time and frequently the knobs are loose and the switch contacts aren't in the best of shape. You may get one that is in good shape or be able to refurbish it yourself, but in general, I think the few extra dollars to get a factory-packaged new game are worth it.

A Creative Computing Equipment Profile...

Atari Video Computer System

David H. Ahl

This system is one of the most comprehensive programmable video games. It has a microprocessor chip — a 6505 to be exact — but it really doesn't matter very much what it is. You are not likely to be interfacing a unit like this to a computer or terminal or some other peripheral. So what really matters is how it performs as a self-contained unit.

Compared to the other programmable units on the market in late 1977 and early 1978, in particular those made by Coleco, RCA, and Fairchild, in our opinion the Atari is head and shoulders over the others. Three new units have been subsequently announced by Bally, VideoBrain and Coleco which are more competitive. After we've reviewed all of them individually, we'll give you some comparisons.

The Video Computer System hooks up to a TV set as do most of these games by taking a TV/game switchbox, hooking the Video Computer System to one side of it, your TV antenna to the other, and the output 300-ohm cable to the VHF input terminals on the TV set. This particular TV/game switchbox is nice in that it can accept either a 300-ohm input or a 75-ohm coax cable as are found on most CATV set ups. The TV/game switchbox contains a matching transformer for the 75-ohm input. Also a matching transformer for the game input since the output from the game is also 75 ohms and not 300 ohms. The unit is powered by a 9-volt AC power supply which is included with the system. While the instruction manual says nothing about ever unplugging the power supply once it is plugged in, we recommend for prolonged periods of inactivity, certainly if you're going to be away from the house on vacation for a long weekend, unplugging the power supply. It doesn't draw any more current than a doorbell transformer. On the other hand, we noticed after it had been plugged in for a month at a time it got a little bit warm. This unit uses the sound system on the TV set so you can adjust the volume control for either minimal levels or to overpowering levels if you

like the sound of tanks rumbling around in your living room.

The dimensions of the unit are 23-1/2 inches by 13 by 4-1/2 inches high. It's made of black plastic with a simulated wood grain panel on the front. It comes with two joystick controls which have red firing buttons in the upper left hand corner of the control. The controls serve different functions in the different games. The joysticks are currently used with the tank games, space games, target games and chase games and hangman. The unit also comes with two paddle controls which are actually just rheostats or knobs which are used for the pong games, speedway games, black-jack, and math practice. A third type of controller which is a rheostat with no stops is used for the Indy 500 racing games. This controller does not come with the original unit and must be purchased separately when you buy the plug in ROM cartridge for the Indy 500 game. A fourth type of controller which also must be purchased separately is a numeric keypad with the digits 0 to 9 and two control characters (exactly the same as a Touch Tone phone). This is used with the Codebreaker and Hunt and Score cartridges.

There are six controls on the top of the console — an on/off power switch, a TV type switch (color or black and white), two controls which determine the difficulty level for the left and right side player. As a handicap for more experienced players, one side can be played in the A position and the other side in B. Details of the switch action are explained in the individual game booklets supplied with the game programs. There is a game select switch which cycles through the various games in each cartridge and next to it is the game reset switch which initializes the game and sets the score to zero. We probably would not have put these two switches next to each other because occasionally we hit the game select switch instead of the game reset switch and, if there are thirty or forty games on the cartridge, as some of them contain, it means you have to hit the game select switch forty more times to get back to where you were. In the center of the console is a what's called a "Game Program Slot". This is an opening for the ROM memory cartridge to be inserted. This cartridge



ATARI Continued ...

is slightly larger than a standard cassette tape. When the unit is completely set up with four or more controllers, the wire to the power supply, and another wire to the TV set, it certainly produces a rather large gaggle of wires lying around, in particular, six or more ten-foot cords. Clearly, this is not something that pleases your average housewife. On the other hand, short of wireless transmission we don't see any easy way around it.

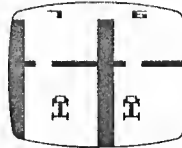
As of this writing, there are sixteen cartridges available for the Atari Video Computer System.

Combat. This cartridge comes with the video computer system and plays three different types of combat games with tanks, bi-planes and jet fighters. There are five different playing fields, a tank open play field with no obstacles, an easy maze playfield with six obstacles, and a complex maze play field with fourteen obstacles. There are fourteen variations of tank games, ranging from ones where you simply shoot a straight missile at each other to shooting guided missiles with direct hits and/or billiard hits (that is where they bounce off the walls and obstacles). A guided missile is one that when it leaves your tank can be guided by your joy stick on a curved course to (hopefully) hit your enemy. There are five invisible tank games in which you and your opponent are invisible to each other except when a missile is fired or when a hit is made. In addition, the tanks become visible whenever they bump into a wall or a barrier.

In the airplane games you have the options of playing with or without clouds, you may play with guided missiles, straight missiles or machine guns which are essentially the same as straight missiles although with a much lesser range. The jet fighter games are much the same as the bi-plane games except that the maneuverability of the fighter is controlled differently with the joystick. Also, they seem to go a little bit faster. All games end when either player scores 99 points or when game time runs out. I have never played a game that has gotten close to 99 points before the game time runs out.

Starship. In this you have four play fields providing seventeen different games. In one, you are the astronaut looking out of the window of your spacecraft, flying in two-dimensional, star-studded space. The object of the game is to use your force-field to draw your opponent's craft into laser range. He doesn't have power to resist but within a certain radius of your vehicle he has power to become invisible. You

score points within a time limit for shooting his vehicle but deduct points if you collide with asteroids. You can test your perception in Warp Drive which gives the appearance of flying through three-dimensional space or you can guide your vessel in for a lunar landing on the moon, controlled by your opponent or a robot mechanism. We found the sound effects in this game added a great deal — eeriespace noises and a resounding BLAM whenever anything gets hit.



Street Racer™

Street racer. You and your opponent race through traffic against the clock controlling speed and steering; add points for passing cars safely, deduct points for collisions. Other games include slalom skiing, in which you ski down a slope through the slalom gates; Dodgem, in which you drive your car over bridges, but lose points by crashing; Scoop Ball in which you trap a ball as it zips down a track, score by passing it to the next racer; Number Cruncher in which you score points by running over passing numbers; Jet Shooter in which you fly your plane past oncoming fighters and try to shoot them down.



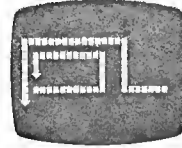
Blackjack™

Blackjack. as its name implies, is a game for one, two or three players in which you play blackjack against the house using standard Las Vegas rules.

Video Olympics. These are 50 variations of the familiar pong games but what variations they are! You can build your opponent's frustration by volleying back and forth before deflecting the ball into his goal, you can have automatic or manual ball speed up. Games include pong, super pong, Foozpong, Quadrapong, soccer, hockey, volleyball and basketball. Options include, of course, the expert novel novice paddle size, a "flim-flam" option which lets you catch the ball and reposition before releasing it. Or one player can challenge the built-in robot player. Games are scored to 21 points.

In **Indy 500**, you have four play fields for fourteen games. You control the direction and speed of your car in a

race to score more laps than your opponent within the time limit. You can choose complex or easy circuits. As your skill increases, try playing Ice Race where the racing surface is designed to be slippery or try Crash N'Score — an attempt to slam a car into a blinking target randomly placed on the screen or play Tag where players alternately try to tag each other.



Surround™

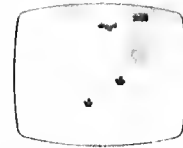
Surround. This cartridge provides fourteen games on three play fields. Use strategy and timing to force your opponent to steer his track through a track that has already been laid. If that sounds a bit complicated, it is. What you are each doing is laying down a track in a sort of maze type of arrangement and trying not to get trapped by your opponent. The track can wrap around off the screen to the left and then reappear on the right side, a rather interesting variation. Other variations include speeding it up, in which you hear and see tracks go from first to fifth gear or diagonal movement in which the race leaders blocks diagonally. Another option is to erase in which you can add intrigue by pushing your controller button so that no blocks appear until the button is released. This game can be played either against an opponent or against the computer itself. One nice variation on this cartridge is the TV graffiti option in which you can write a word or draw pictures on the TV screen in a free form mode. The sound effects on the Chase games are fantastic; whenever you hit a harrier you hear a big "SPRONG" with a reverb echo effect.



Basic Math™

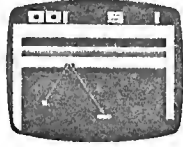
Basic Math. In this game you can multiply, add, subtract or divide picking a base number to work with in a series of ten problems. At the moment, this is a rather cunheresome game to play since the input is via the paddle controller. It seems to us that the numeric keypad controller would be more suitable for this game package. One nice touch is that when a correct answer is given, a little musical tune plays rather than just lighting "yes" or "that's right" on the screen.

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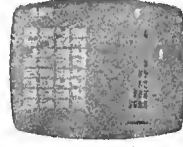
Air/Sea Battle™

Air/Seabattle. In Anti-Aircraft game you may fire an anti-aircraft gun at randomly flying jets and helicopters. In Torpedo you move guns along the bottom and fire torpedos at ships; in Polaris, you control the speed of ships and missiles while shooting at planes. Bomber is like missile but planes drop bombs on passing ships; in Polaris vs. Bomber one player is a plane and the other is a ship. There are also Shooting Gallery games in which you angle your gun and fire at clown, duck and rabbit targets which are darting across the screen.



Breakout™

Breakout. Believe it or not, here are 48 versions of the popular arcade Breakout game. On the cartridge there's original Breakout, of course, along with 36 variations which introduce the player to the confusing world of gravity, time, funny paddles, and invisible bricks. We particularly liked the two-player variations which alternate between players on each shot rather than at the end of the game.

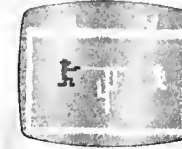


Codebreaker™

Codebreaker. Here are some old computer game favorites — six variations of Bagels, six of Mastermind, and eight of Nim. Need we say more?!

Hunt & Score. This is a video version of the TV quiz show "Concentration." Thirty numbers flash on the screen. Behind each one is a familiar object or a wild card. Match any two and score. The cartridge contains eight game versions for one and two players. We had a prototype of this game on loan for several weeks but no instructions; within hours my 7-year old had figured it out and was challenging (and beating!) the rest of the family as well

as the whole neighborhood. Minnesota Fats move over!



Outlaw™

Outlaw. In the 12 Gunslinger variations you shoot it out with an opponent — sometimes with a cactus, wall, or stagecoach (stationary or moving) between you. Some variations permit bullets to ricochet or blast away the object between opponents. Others limit the number of bullets you have. Four more single-player variations allow you to shoot at a moving target. Warning: after a couple of glasses of wine, Chris Cerf and I went into fits of convulsive laughter playing this game and lost our ability to fire straight. This could happen to you!

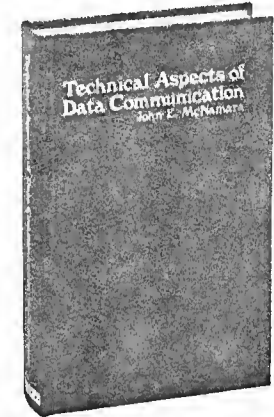
Other games currently available but not reviewed here are Space War, Home Run and Hangman. Soon to be released are Football and Basketball.

Another nice touch with the Atari system is that every few seconds the playing field colors change. This prevents one particular phosphor from getting worn out. Even if one game is played repeatedly its pattern will not become etched into the screen. This is a real plus not found in any of the other video computer systems.

The Atari Video Computer System is also marketed by Sears as Tele-Games Video Arcade System. The price for this system is up to \$230 in retail specialty shops. The Spring and Summer 1978 J.C. Penney catalog lists it at \$164.95, about as low as I have seen it anywhere. Cartridges cost about \$19.00 apiece. Clearly if you were to buy all fifteen cartridges currently available, at \$19 apiece, and the extra controllers, you would wind up spending considerably more on cartridges and controllers than the Video Computer System cost in the first place. Initially, it is probably worth finding a retail store that has most or all of the cartridges on display and trying them out, selecting the two or three that seem to most strike your fancy and starting with that. If you then tire of them later on, you can always buy additional cartridges. (Personally, if this were my only system, I'd go with Video Olympics, Surround, Outlaw, and Breakout for starters along with Combat which comes with the system.)

All in all, the Atari Computer System appears to be well made, the games are designed with many hours of fun in mind, and, if your family is anything like mine, you'll find that they do indeed provide countless hours of enjoyment for children of all ages. ■

Now, a book for the practicing professional...



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